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Application Number	10/701,510
Filing Date	11/06/2003
First Named Inventor	Sylvain Primeau
Art Unit	2875
Examiner Name	
Attorney Docket Number	

Total Number of Pages in This Submission

15

ENCLOSURES (Check all that apply)

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SYLVAIN PRIMEAU

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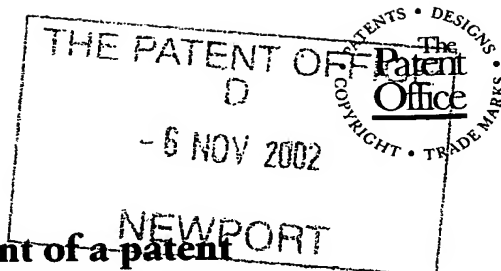
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Dated 21 October 2003



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06NOV02 E761218-2 C05193
P01/7700 0.00-0225808.5

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1. Your reference 9085-1

2. Patent application number
(The Patent Office will fill in this part) 0225808.5 06 NOV 2002

3. Full name, address and postcode of the or of each applicant (underline all surnames)
SYLVAIN PRIMEAU
760, DE MARSEILLE
ST-AMABLE, QUEBEC, CANADA
J0L 1N0

Patents ADP number (if you know it)

08501926001

If the applicant is a corporate body, give the country/state of its incorporation

CUSTOMER ACCOUNT NUMBER C05193

4. Title of the invention

ARTIFICIAL TREE HAVING AN ELECTRICAL ILLUMINATING SYSTEM

5. Name of your agent (if you have one)

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

INVENTION QUEBEC INC.
DELEGATION GENERALE DU QUEBEC
59, PALL MALL
LONDON, ENGLAND
SW1Y 5JH

Patents ADP number (if you know it)

079 02455002

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number	Country	Priority application number (if you know it)	Date of filing (day / month / year)

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application	Number of earlier application	Date of filing (day / month / year)

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'Yes' if:

- a) any applicant named in part 3 is not an inventor, or
- b) there is an inventor who is not named as an applicant, or
- c) any named applicant is a corporate body.

See note (d))

Patents Form 1/77

9. Enter the number of sheets for any of the following items you are filing with this form. Do not count copies of the same document

Continuation sheets of this form	1
Description	2 X 11
Claim(s)	
Abstract	
Drawing(s)	2 X 6



10. If you are also filing any of the following, state how many against each item.

Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

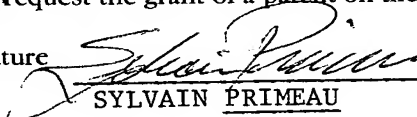
Request for preliminary examination and search (Patents Form 9/77)

Request for substantive examination (Patents Form 10/77)

Any other documents (please specify)

11. I/~~we~~ request the grant of a patent on the basis of this application.

Signature


SYLVAIN PRIMEAU

Date October 28/2002

12. Name and daytime telephone number of person to contact in the United Kingdom (0171) 930-8314

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Notes

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I, Sylvain Primeau

C/O Invention Quebec inc.
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do hereby declare this invention to be described in the following statement:

ARTIFICIAL TREE HAVING AN ELECTRICAL ILLUMINATING SYSTEM

FIELD OF THE INVENTION:

The present invention relates to the general field of decoration items and is particularly concerned with an artificial tree having an electrical illumination system.

BACKGROUND OF THE INVENTION:

Many persons decorate their homes, offices and yards during the holiday season with a variety of Christmas decorations. A variety of Christmas lights and decorative assemblies are available for illuminating and decorating Christmas trees. Conventional illumination of Christmas trees involves the use of plurality of separate elongated, insulative, electrically conductive wire strings on which are mounted

several lighting elements which are spaced apart from each other. Each of these light elements includes a female socket member which is adapted to receive a screw-in or bayonet-type lamp strung in series or in parallel. The strings are attached at one or both ends in an electrical plug which provides the source of electricity.

The form of lighting that has become particularly popular in recent years involves use of so-called "miniature" lights wherein a series of small, low-voltage lights of the incandescent-type are stretched and fixed around the tree. In lighting sets of this type, the electrical supply does not lie adjacent the trunk of the tree, but rather extends around the outer tips of the branches of the tree in the same region in which the lights are resting.

Current practice in decorating Christmas trees is generally to drape the wires which connect Christmas tree light sockets with light bulbs therein from branch to branch of the tree to spread the lights around the tree. Generally, the wires are not secured to the tree branches. In some instances, this means that the wires can slip from the branches, and in some instances, it may be difficult to extend the lights in a desired fashion between relatively widely spaced branches.

With some light sets, loops and a wire at each light socket are provided with a slide bead over the wires so the loop can be placed about the end of a branch and the slide bead moved to close the loop around the branch so as to secure the light sockets to the desired branches. Other light sockets are provided with clips of some type to enable the light socket to be clipped to a Christmas tree branch.

However, the loops and clips generally are provided with relatively large light sockets, and the miniature light sets which have become popular generally do not include any means for securing a light socket to a branch. Accordingly, light sockets have a tendency to fall off the branches.

In recent years, the use of artificial Christmas trees has become increasingly popular. In addition to being durable, artificial Christmas trees can be made in a variety of styles. The artificial tree can be removed from storage each year during the holiday season, assembled and decorated. At the end of the holidays, the tree is then disassembled and stored until next Christmas.

Some commercially available artificial Christmas trees include a permanent tree trunk and limb assembly with the limbs secured along the trunk at fixed positions. Other forms of artificial Christmas trees include a folding limb arrangement whereby the limbs remain secured to the tree trunk but fold upwardly and inwardly along the trunk for storage purposes.

Most commercially available artificial Christmas trees and associated artificial tree lighting displays suffer from numerous drawbacks. For example, many existing simulated tree light displays have a great number of pieces that must be assembled in a particular manner. If one of the pieces is lost or broken, the display either cannot be properly assembled or, if assembled, does not have adequate structural stability. Additionally the simulated trees and associated lighting displays may be frustrating to assemble as the numerous pieces are difficult to place together.

Furthermore, some artificial Christmas trees and lighting arrangements suffer from lack of versatility and prevent variations in shape and size of the ornamentation. This often results in the Christmas decorations being placed in the same location and looking the same year after year. Also, some simulated Christmas tree light displays cannot be disassembled resulting in the need for a large amount of storage space.

Another problem associated with some types of artificial Christmas trees and associated lighting systems is in lighting the limbs of the tree with electric lights because the limb structure of such trees is generally not sufficiently profuse to hide the required electrical wiring. Accordingly, there exists a need for an improved artificial tree and associated lighting display.

Advantages of the present invention include that the proposed artificial Christmas tree and associated light display is designed so as to provide an aesthetical pleasing visual appearance. Furthermore, the proposed structure facilitates assembly and disassembly of the artificial Christmas tree and associated light structure through a set of quick and ergonomic steps without requiring special tooling or manual dexterity. Still furthermore, the proposed structure allows the Christmas tree and associated lighting display to be folded in a generally compact configuration when not in use so as to reduce the storage space. Also, the proposed structure allows for variations in the visual effect produced by the branches and associated lighting display. Still furthermore, the proposed structure is designed so as to be easily installable on newly manufactured artificial Christmas trees and can also be retro-fitted on existing artificial Christmas trees. Still furthermore, the proposed structure is designed so as to be manufacturable using conventional forms of manufacturing so as to provide a structure that will be economically feasible, long lasting and relatively trouble free in operation.

BRIEF DESCRIPTION OF THE DRAWINGS:

Embodiments of the present invention will now be disclosed, by way of example, in reference to the following drawings in which:

FIGURE 1: in a partial exploded view with sections taken out, illustrates some of the components of an artificial Christmas tree and associated light display in accordance with an embodiment of the present invention. Some of the components shown being used for simulating upper branches of an artificial Christmas tree;

FIGURE 2: in a transversal cross sectional view, illustrates some of the components shown in FIG. 1;

FIGURE 3: in a longitudinal cross sectional view taken along arrows A-A of FIG. 2, illustrates some of the components shown in FIGS. 1 and 2;

FIGURE 4: in a partial perspective view with sections taken out, illustrates a set of artificial branches and associated light displays in accordance with an embodiment of the present invention being mounted on a central trunk for simulating a Christmas tree;

FIGURE 5: in a partial perspective view with sections taken out, illustrates artificial branches and associated light displays in accordance with an embodiment of the present invention being mounted on a central trunk, the branches and light displays being used for simulating some of the central and lower branches of a Christmas tree;

FIGURE 6: in a transversal cross sectional view, illustrates some of the components shown in FIG. 5;

FIGURE 7: in a transversal cross sectional view, illustrates some of the electrical connections associated with light displays used for illuminating some of the lower branches;

FIGURE 8: in a transversal cross sectional view, illustrates some of the electrical connections associated with light displays used for illuminating some of the higher branches;

FIGURE 9: in a partial longitudinal cross sectional view, illustrates an alternative embodiment of artificial branches and associated light displays used for simulating Christmas tree;

FIGURE 10: in a partial exploded view, illustrates some of the components shown in FIG. 9.

DETAILED DESCRIPTION:

Referring to FIG. 1, there is shown sections of an artificial Christmas tree and associated light display in accordance with an embodiment of the present invention. The artificial Christmas tree includes a tree trunk (10) having a generally elongated configuration. The tree trunk (10) also typically has a generally disc shaped cross sectional configuration. As shown more specifically in FIG. 4, level units (12) are mounted on the tree trunk (10) at various levels along its longitudinal axis so as to simulate the appearance of rows of branches.

Each level unit (12) includes an attachment component (14) and a corresponding display component (16). Each attachment component (14) includes a generally cylindrical attachment wall (18) configured and sized for being slidably inserted over a corresponding section of the tree trunk (10). The attachment component (14) is provided with a component-to-trunk attachment means for releasably attaching the attachment wall (18) to the tree trunk (10). Typically, the component-to-trunk attachment means includes an attachment aperture (20) formed

in the attachment wall (18) and a conventional attachment component such as a screw or bolt (22) adapted to be inserted into the attachment aperture (20) for frictionally engaging the outer surface of the tree trunk (10).

Each attachment component (14) also includes an attachment flange (24) extending generally radially from the attachment wall (18) adjacent the longitudinal thereof.

Each display component (16) includes a generally cylindrical display wall (26) configured and sized for being slidably inserted over the attachment wall (18) of an attachment component (14). Typically, the display wall (26) is also configured and sized so as to allow one of its longitudinal edges to abuttingly rest on a corresponding attachment flange (24) while the opposed edge allows access to the corresponding attachment component and aperture (22), (20).

A set of display legs (28) extend generally radially and outwardly from the outer surface of the display wall (26). In the embodiment shown throughout the FIGS., three display legs (28) extend from the display wall (26) at generally 120° relative to each other. It should be however understood that any suitable number of display legs (28) in any suitable relationship relative to each other may extend from the display wall (26) without departing from the scope of the present invention.

As shown more specifically in FIG. 3, each display leg (28) includes a branch receiving recess (30) for receiving a proximal end of a branch (32) simulating the appearance of a Christmas tree branch. Each branch (32) typically includes a branch stem (34) made of twisted metallic or polymeric wire and a plurality of simulated evergreen needles (36) extending outwardly therefrom. Again, it should be understood that the branches (32) could be otherwise formed without departing from the scope of the present invention.

Preferably, each branch (32) is attached at a proximal end thereof to a generally cylindrical branch pivot component (38). Also, typically, each branch receiving recess (30) defines a generally cylindrical pivot receiving section (40) and a generally inwardly tapering clearance section (42) defining a pair of abutment walls (44) converging inwardly towards the pivot receiving section (40).

The pivot receiving section (40) is configured and sized for snappingly receiving a pivot component (38) and allowing pivotal movement thereof about its longitudinal axis. The clearance section (42) allows the stem (34) of each branch (32) to pivot between an extended configuration wherein it extends generally radially from the corresponding display block (28) and a retracted configuration wherein it lies in a generally parallel relationship relative to the tree trunk (10). Pivotal movement of the branch stem (34) is limited by the abutment walls (44).

Each display leg (28) also includes a socket recess (46) for receiving the body (48) of a male electrical plug (50). The socket recess (46) is provided with female electrical apertures (52) formed therein for receiving corresponding male electrical prongs (54) extending from the male plug body (48). The male electrical prongs (54) are electrically coupled to display wires (56) leading to light bulb sockets (58) such as miniature light bulb sockets for receiving corresponding lights, such as miniature lights (60).

The female electrical apertures (52) are, in turn, electrically coupled by socket coupling wires (62), (64) both extending through a corresponding display leg (28) to a first and a second display conductive rings (66), (68).

The first and second display coupling rings (66), (68) are made out of electrically conductive material and are positioned so as to be substantially in register with corresponding first and second attachment conductive rings (70), (72)

mounted on the attachment component (14). Typically, the first and second attachment conductive rings (70), (72) are positioned respectively on the flange (24) and the outer surface of the attachment wall (18) while the first and second display conductive rings (66), (68) are positioned respectively on a peripheral edge of the display wall (26) and on the interior surface of the display wall (26). Other positioning of the conductive rings (66) through (72) could be used without departing from the scope of the present invention.

Attachment conductive rings male and female sockets (74), (76) are electrically coupled to the attachment first and second conductive rings (70), (72) through attachment linking wires (78), (80). The male and female linking sockets (74), (76) are, in turn, adapted to receive unit linking wires (82) having corresponding unit linking male and female sockets (84), (86). A lowermost attachment male socket (74) is also adapted to receive a plugging wire (88) having a conventional male electrical plug (90) attached thereto for plugging to a conventional electrical outlet. A longitudinal slot (92) formed on the peripheral surface of the trunk (10) is adapted to receive the unit linking wires (82) and the plugging wire (88).

Referring now more specifically to FIGS. 5, 6 and 8, there is shown units (12') that are adapted to be used for forming the higher located branches of the artificial tree. The components of the units (12') are substantially similar to that of the units (12) and, hence, similar reference numerals will be used to denote similar components. One of the main differences between the units (12) and (12') resides in that the display female sockets (52) are electrically coupled to adjacent display female sockets (52) so that the display wires (56) are electrically coupled in serial as opposed to being connected in parallel as was the case with the units (12). One of the display female socket (58) is electrically coupled to a first display conductive ring (66) while another display female socket (52) is electrically coupled to the

second display annular conductive ring (68) to allow the units to be electrically linked together by a unit linking wire (82). The parallel and serial connection respectively of the lower and higher located units (12), (12') are schematically illustrated respectively in FIGS. 7 and 8.

Referring now more specifically to FIGS. 9 and 10, there is shown an alternative embodiment of the display component (16'). The display component (16') is generally similar to the display component (16) and, hence, similar reference numerals will be used to denote similar components. One of the main differences between display component (16') and the display component (16) hereinabove disclosed resides in that the pivot component (38) is releasably insertable and removable into the pivot receiving section (40) of the branch receiving recess (30). A biasing component (94) such as an helicoidal-type spring may be used for biasing a piston-type component (96) towards an extended configuration wherein it pushes on the pivot component (38) when the latter is inserted into the pivot receiving section (40).

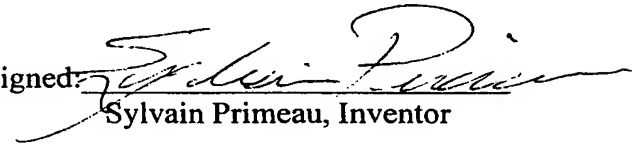
Also, as shown more specifically in FIG. 10, both the branch stems (34) and the display wires (56) may be releasably attached to the pivot component (38) using suitable attachment means such as a stem receiving recess (98) and a pivot-to-wire plug combination (100).

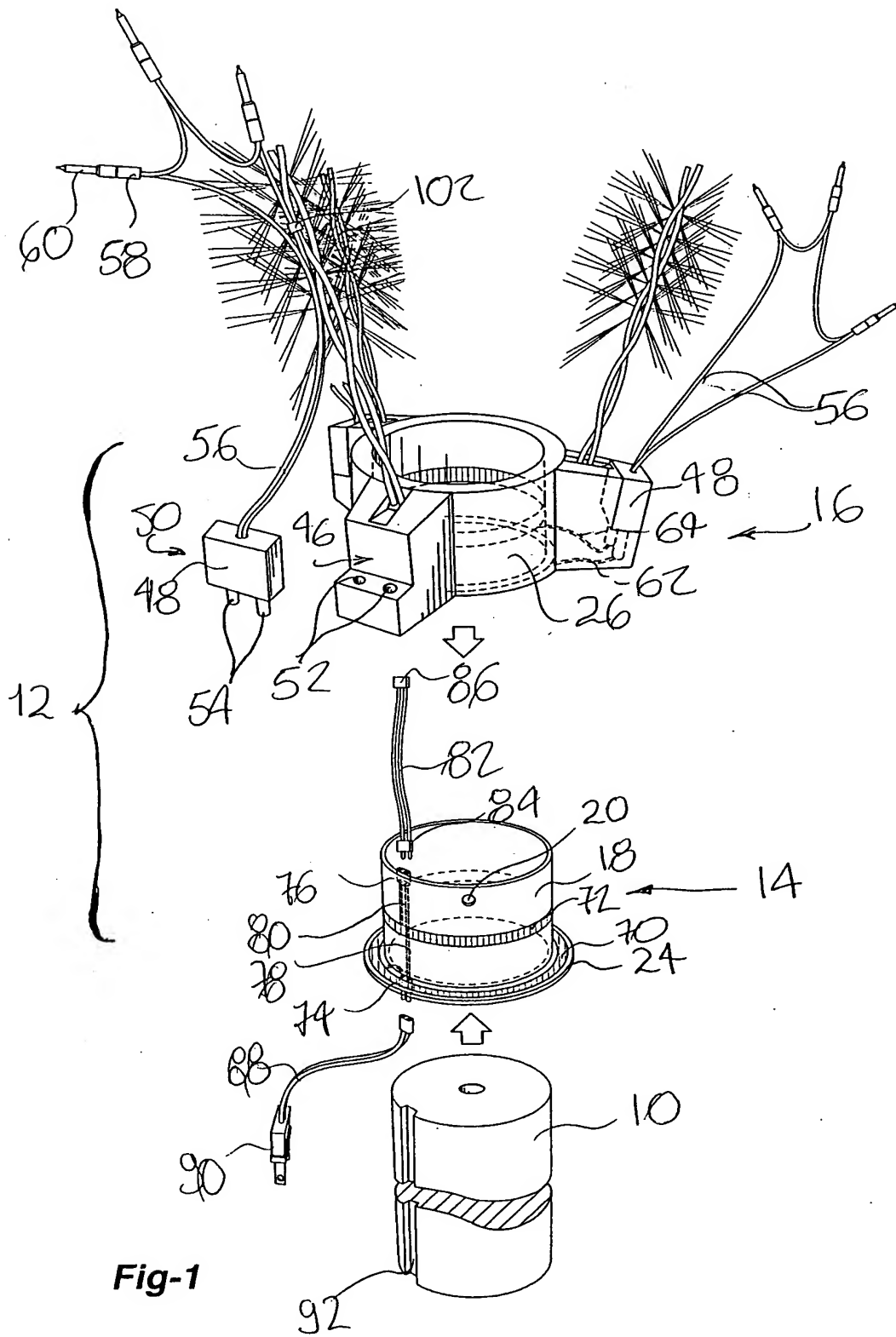
In use, the units (12) and/or (12') are mounted at the desired location along the trunk (10) using the attachment component (22). More specifically, the attachment component (14) is mounted at a suitable location on the trunk (10) and, prior to mounting a corresponding display component (16) on the attached attachment component (14). The branches (32) are then pivoted to an extended display configuration using the pivot component (38). The plug component (50) may be inserted into the plug receiving recess (46) and the display wires (56) attached to

the branches (32) using suitable attachment means such as straps (102). Furthermore, the display component (16) may be rotated about the attachment components (14) while maintaining electrical contact therewith so as to further allow for various aesthetical pleasing configurations.

The use of pivoting branches (32) and the possibility of switching the plugs (50) and associated light bulbs (60) allows for variation and the aesthetical appearance of the Christmas tree and associated lighting arrangement. Also, when the Christmas tree needs to be stored, both the lighting arrangement and branch may be optionally removed from the display legs (28) through a set of quick and ergonomic steps so as to facilitate storage thereof.

Signed:


Sylvain Primeau, Inventor



Stephen R. ...
 INVENTOR

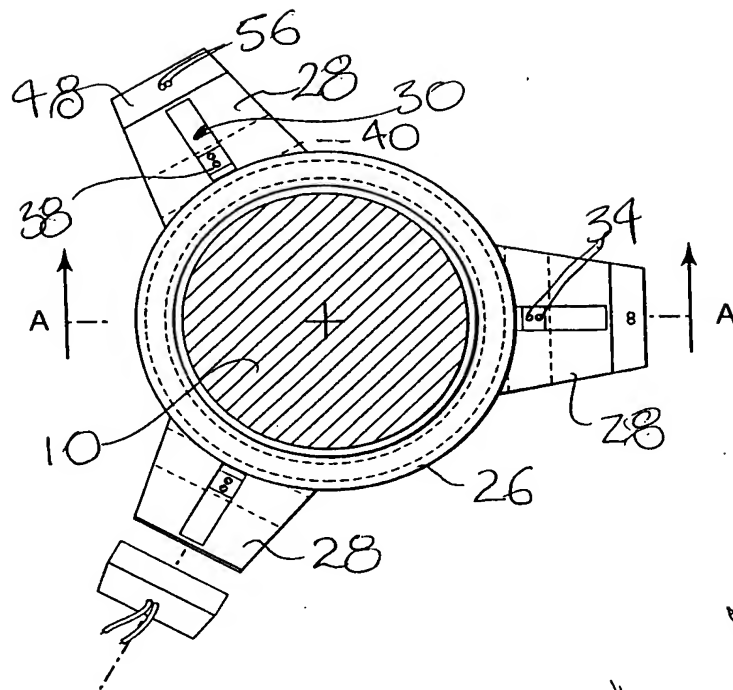


Fig-2

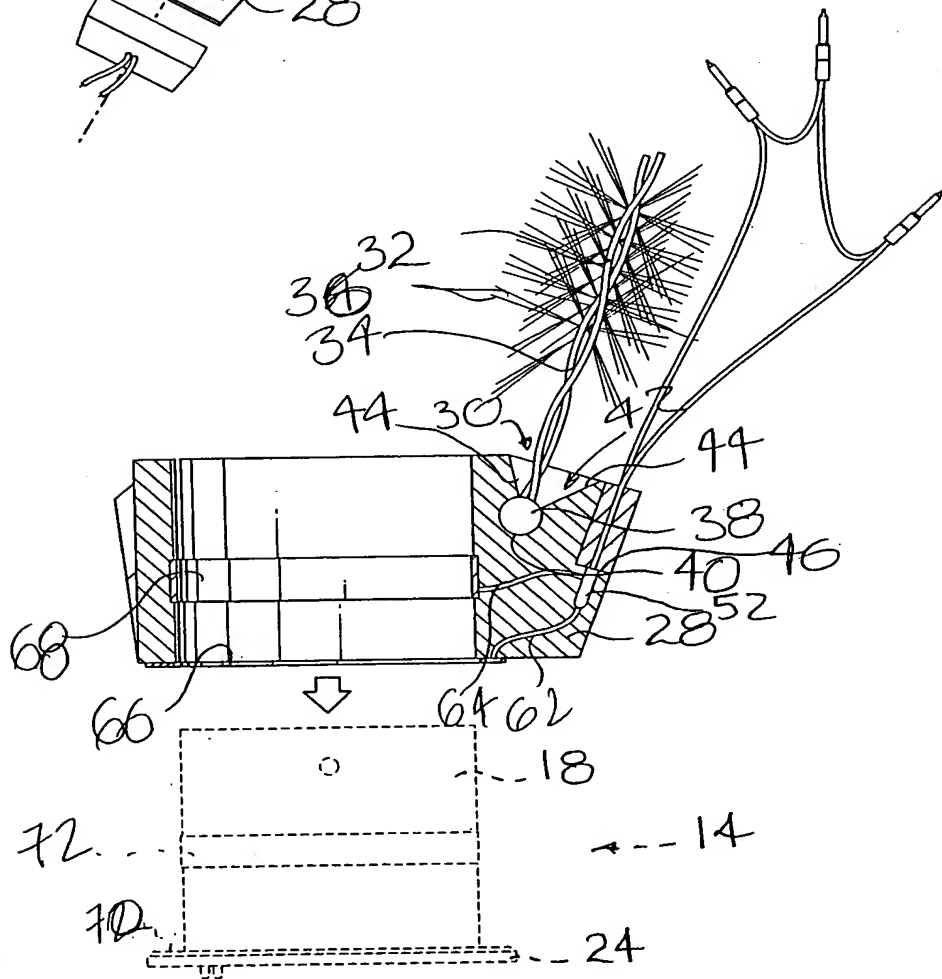


Fig-3

Spencer Percin
INVENTOR

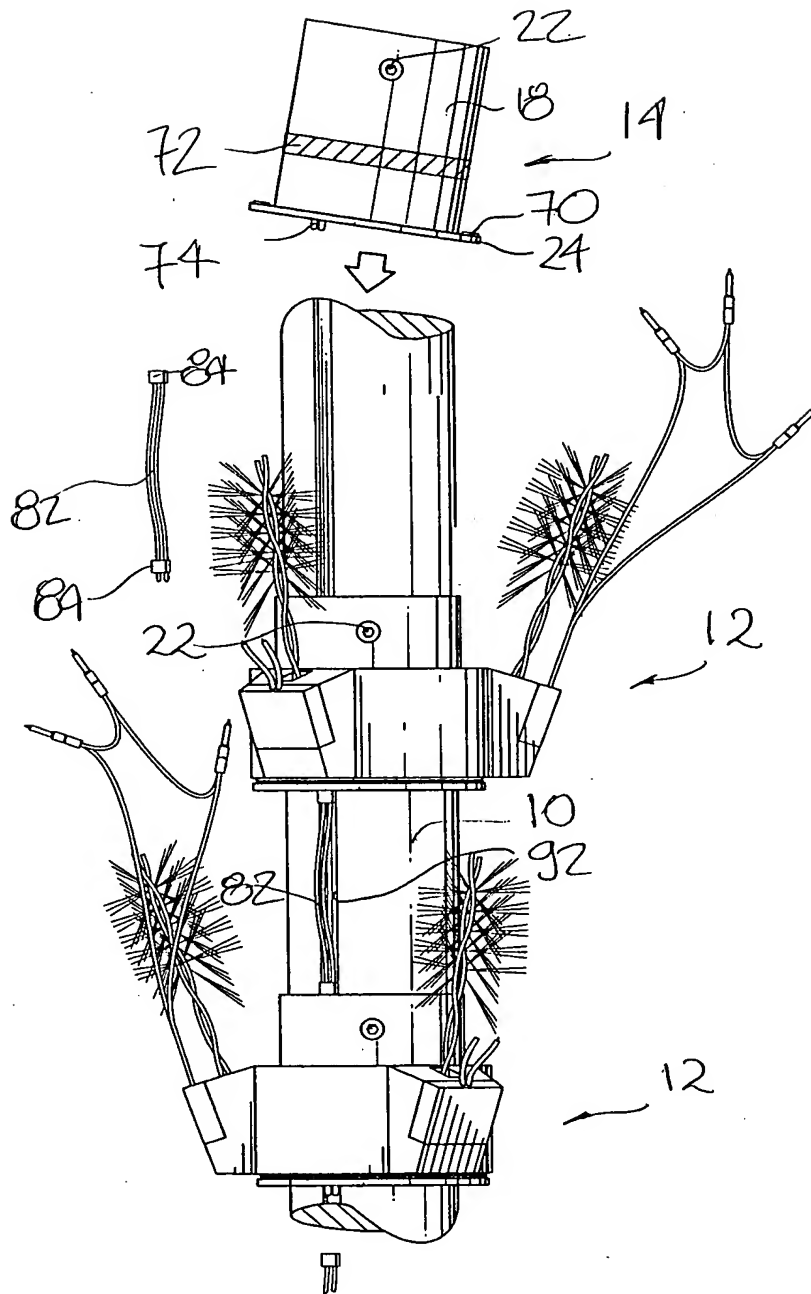


Fig-4

Spencer R. Riden
INVENTOR

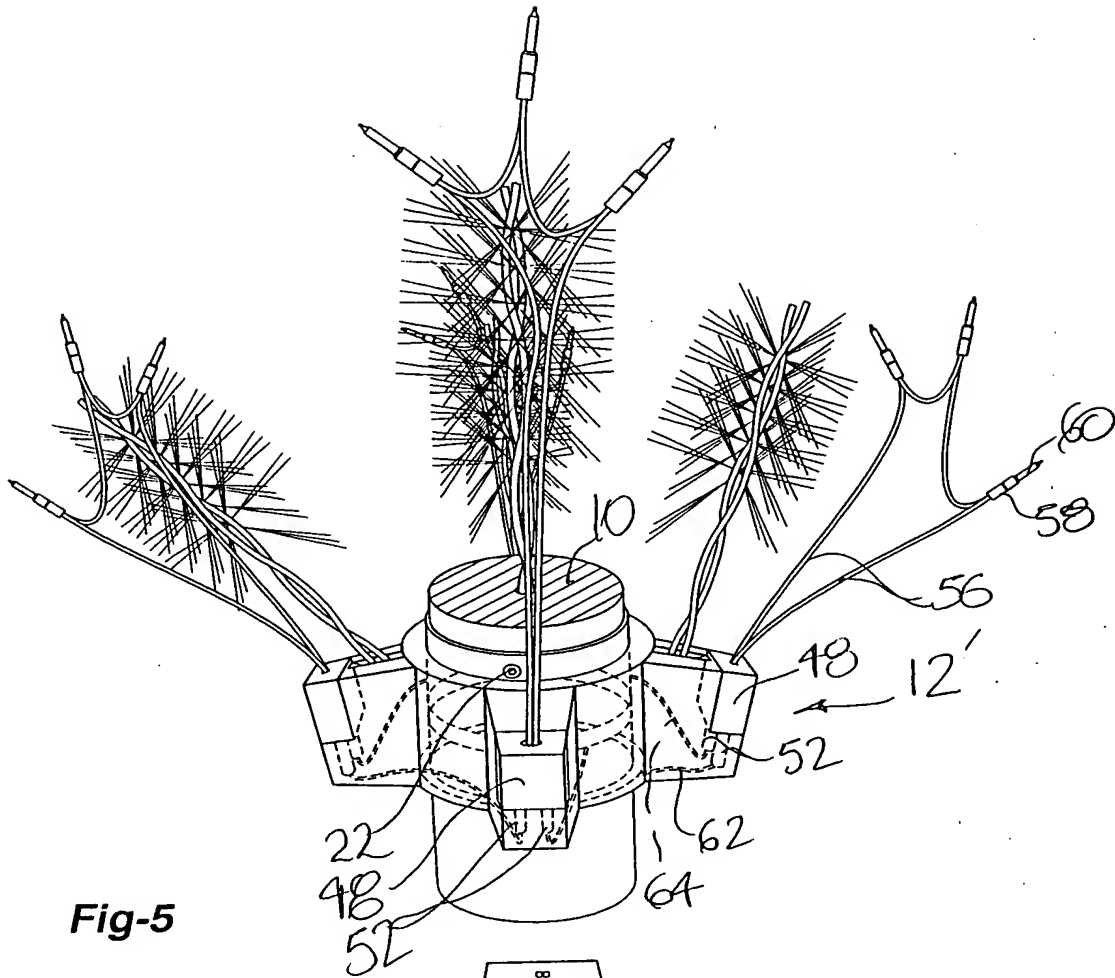


Fig-5

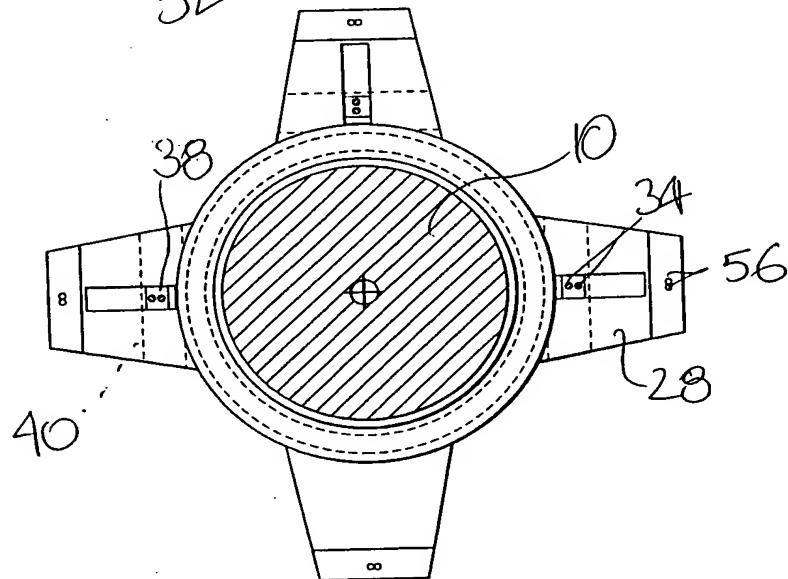


Fig-6

Sophia P. Parnian
 INVENTOR

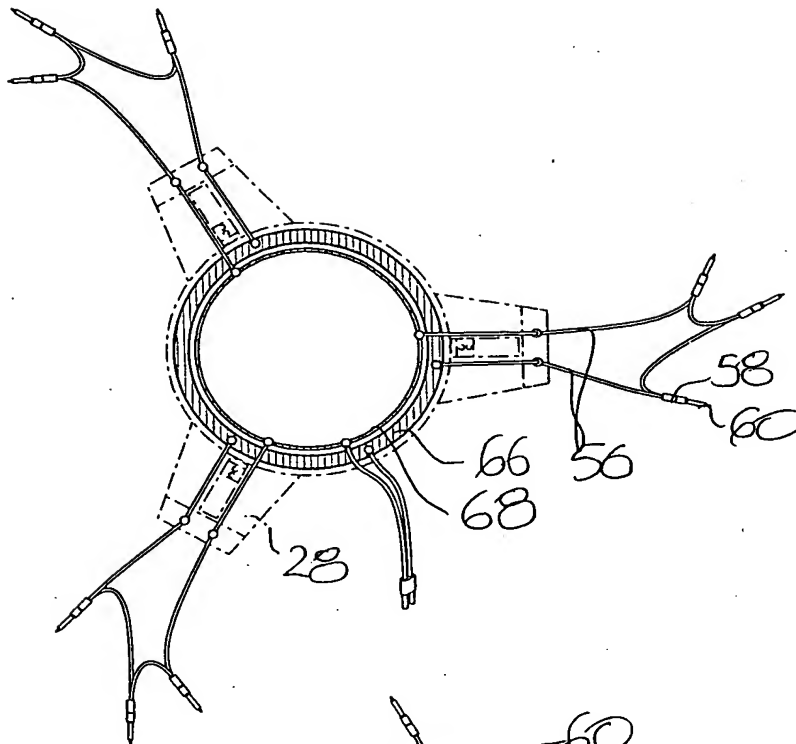


Fig-7

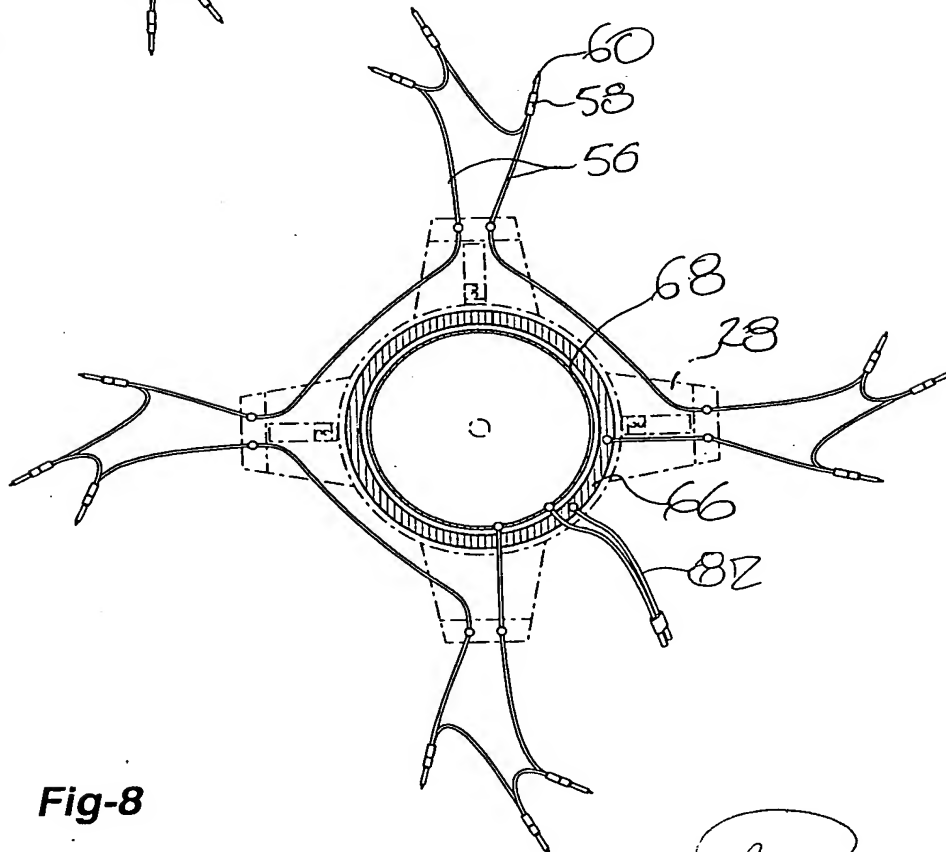


Fig-8

Explains Precision
INVENTOR

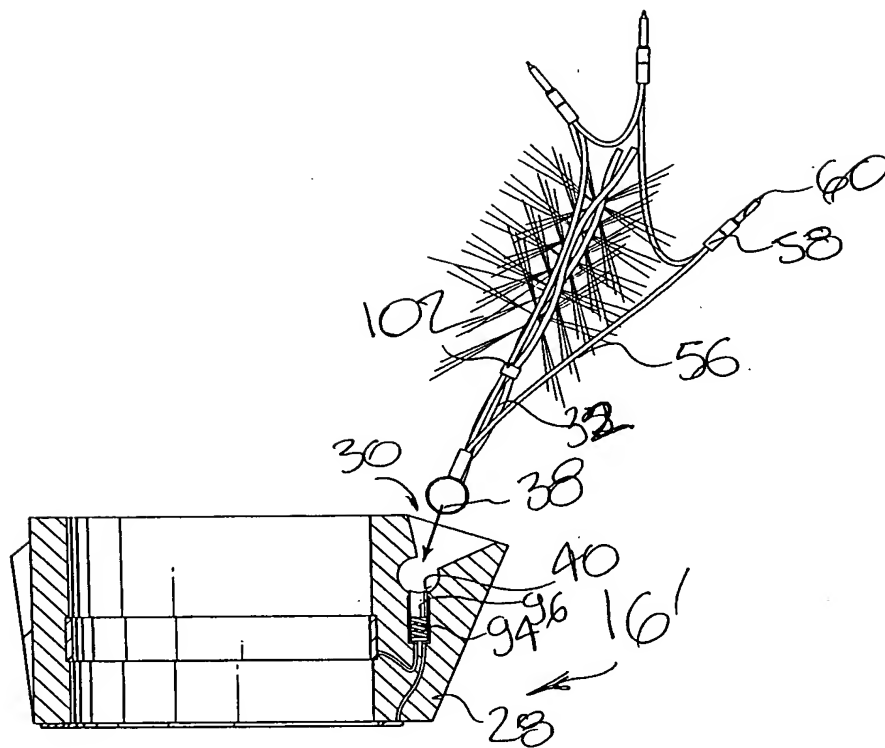


Fig-9

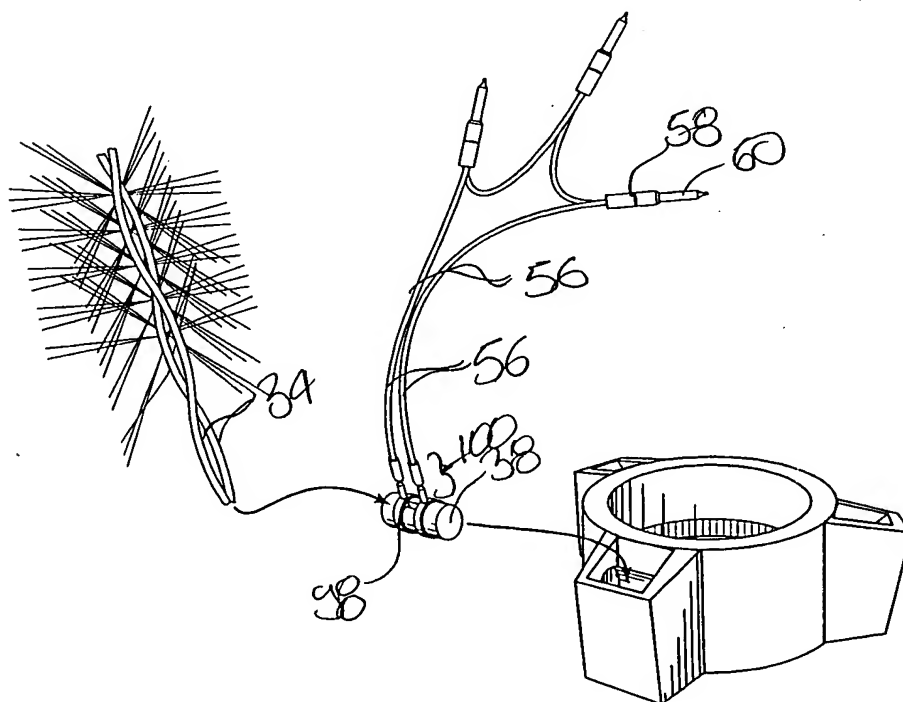


Fig-10

Charles Barton
INVENTOR

